

Work Order ID 63222

Monday, October 25, 2010 12:47:57 PM



Ship end of week

Page 1

Item ID: D3269-2

Accept



Setup Start



Revision ID:

Item Name: Bubble Window, RH

Stop



Start Date: 10/25/2010 Start Qty: 3.00



Cust Item ID:

Required Date: 10/29/2010 Req'd Qty: 3.00

Customer:

Reference:

Approvals:

Process Plan: *mf*

Date: *10-10-25* Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3269

Rev D *Rev E*

100

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

Set up Clamping Frame and Load Program as per Folio FTA 014

P10 →

Wh 10/10/26

110

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

Cut Blanks to 30" by 48"

3

B 10/10/26

120

0.00



THERMOFORMING MACHINE

Thermoform

Memo

0.00

Thermoforming Machine

Thermoform as per Dwg. D3269 and Folio FTA 014 ☐ Dwg. Rev. *E* ☐ Folio Rev. *C*

3

①

BB 10/10/26

P10. →

W/O: 63222		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
		Perm. change					
10/10/27	100	update Rev in heads box	DL	10/10/27			S 10/10/27
	170	ADD "IDENTIFY & STOCK" TO SEQ	DL	10/10/27			

Part No: D3269-2 PAR #: N/A Fault Category: Thermobonding NCR: Yes No DQA: DL Date: 10.10.28
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: DL Date: 10/10/28

NCR: 63222		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<i>10/10/26</i>	<i>120</i>	<i>SHEET PULLED OUT OF CLAMPS. AND DID NOT FORM.</i>	<i>DL</i>	<i>Scrap = Replace. 1 part</i>	<i>DL</i> <i>10/10/26</i>	<i>S</i> <i>10/10/27</i>	<i>DL</i>	<i>S</i> <i>10/10/27</i>
		<i>LC. machine malfunction</i>			<i>DL</i> <i>10/10/27</i>			

NOTE: Date & initial all entries

Work Order ID 63222

Monday, October 25, 2010 12:47:57 PM

Page 2

Item ID: D3269-2

Accept

Setup Start

Revision ID:

Stop

Item Name: Bubble Window, RH

Start Date: 10/25/2010 Start Qty: 3.00

Cust Item ID:

Required Date: 10/29/2010 Req'd Qty: 3.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

1) Check Surface finish for undesired marks, voids, dimples etc. 2) Check depth of bubble to ensure conformity to drawing tolerances.

3

B
10/10/26

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

x3

Dh
10/10/26

150

HAND FINISHING THERMOFORMING

0.00



Thermoform

Memo

0.00

Thermoforming Machine

1) Trim off excess flange material 2) Buff out any light scratches or blemishes 3) Etch part number and batch number

3

B
10/10/26
Dh
10/10/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 63222

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Page 3

Item ID: D3269-2

Accept

Setup Start

Revision ID:

Stop

Item Name: Bubble Window, RH

Start Date: 10/25/2010 Start Qty: 3.00

Cust Item ID:

Required Date: 10/29/2010 Req'd Qty: 3.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

1) Visually inspect for clarity, and proper formation.

8/10/10/27

(73)

170

Packaging

0.00

Packaging

Memo

0.00

Packaging

PMP 63223

PMP 63223 (3)

180

QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control

10/10/27 MF 10-10-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, October 25, 2010 12:47:56 PM

Page 1

Work Order ID: 63222

Parent Item: D3269-2

Parent Item Name: Bubble Window, RH



Start Date: 10/25/2010

Required Date: 10/29/2010

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP A 05.03.22 New issue KJ/JLM
 IPP B 05.05.09 Added engraving EC
 IPP Rev:06-07-03 As per Rev C JLM
 IPP C 07.11.06 Thermoform in-house DL verified by:EC
 IPP Rev: D 08.07.24 As per New Tool DL.

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MACRYLICS.177		Purchased	No				sf	239.8672	10	30			



0.177" PLEXIGLAS G CLEAR CAST ACRYLIC SHEET

Location	Loc Qty	Loc Code
therm	239.8672	
107291	24	
111315	54	
115234	161.8672	

BB
 34.375 sq ft.
 plus 10.76 sq ft.
 10/10/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

#1

DART AEROSPACE LTD		Work Order: 63222
Description: Bubble Window, RH (R44)		Part Number: D3269-2
Inspection Dwg: D3269	Rev: E	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Depth of bubble within tolerances	✓			
Shape Definition	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: BB

Date: 10/10/26

TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
10.0	+/-0.25	10.25	✓			
6.2	0.036 Min	.057	✓			
3.8	0.057 Min	.094	✓			

Measured by: BB

Date: 10/10/26

Audited by: Dh

Date: 10/10/26

Prototype Approval:

Date:

Rev	Date	Change	Revised by	Approved
A	08.11.27	New Issue	KJ/DL	
B	09.10.16	Tolerances revised per Dwg Rev E	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

2

DART AEROSPACE LTD		Work Order:	63222
Description:		Part Number:	D3269-2
Inspection Dwg: D3269 Rev: E		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than "	✓			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: Dh

Date: 10/10/26

TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
10.0	+/- 0.25	10.25"	✓			
6.2	0.036 MIN	.060	✓			
3.8	0.057 MIN	.095	✓			

Measured by: Dh

Date: 10/10/26

Audited by: BB

Date: 10/10/26

Preliminary Approval:

Date:

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

10.04.15

#3

DART AEROSPACE LTD		Work Order: 63222
Description: D3269 BUBBLE WINDOW		Part Number: D3269-2
Inspection Dwg: D3269 Rev: E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than "	✓			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: JB	Date: 10/10/26
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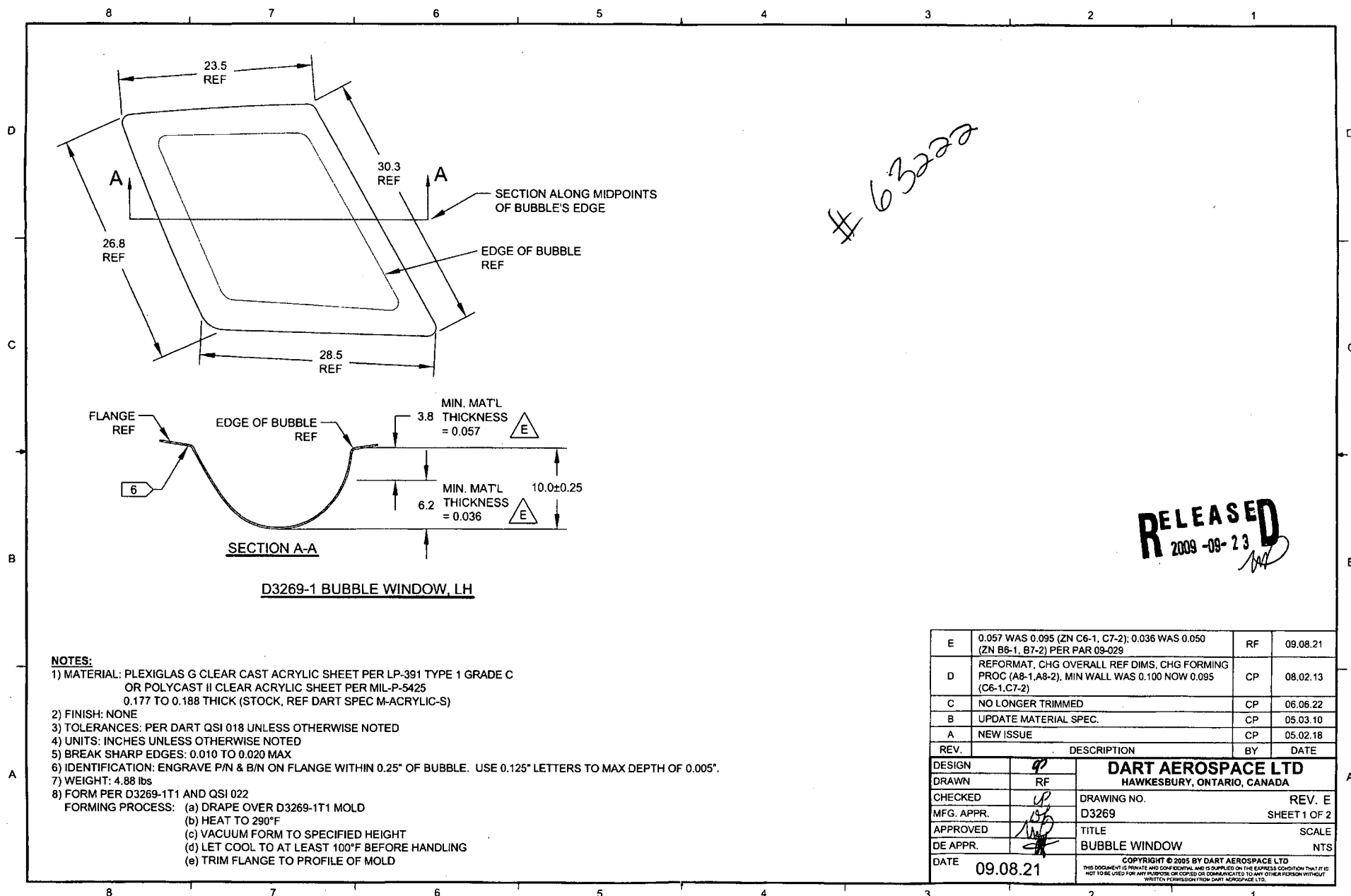
TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
10.	+/- 0.25	10.125	✓			
6.2	.036 MIN	.059	✓			
3.8	.057 MIN	.097	✓			

Measured by: JB	Date: 10/10/26
Audited by: Dhu	Date: 10/10/26
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

10.04.14



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

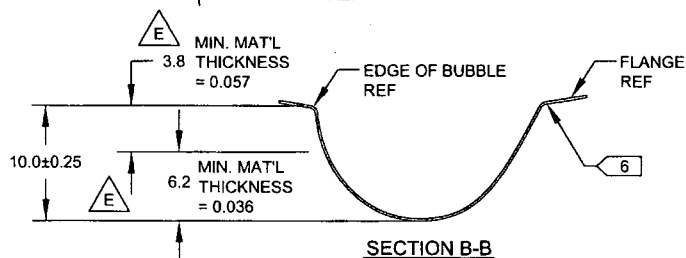
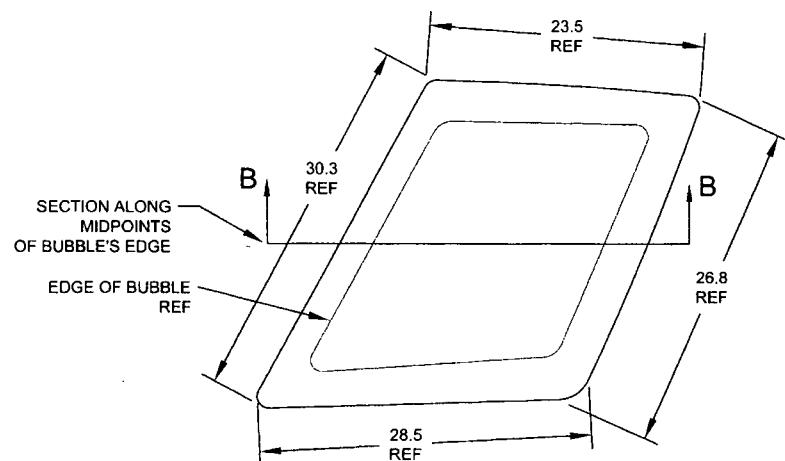
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1



SECTION B-B
D3269-2 BUBBLE WINDOW, RH

NOTES

- 1) MATERIAL: PLEXIGLAS G CLEAR CAST ACRYLIC SHEET PER LP-391 TYPE 1 GRADE C
OR POLYCAST II CLEAR ACRYLIC SHEET PER MIL-P-5425
0.177 TO 0.188 THICK (STOCK, REF DART SPEC M-ACRYLIC-S)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.010 TO 0.020 MAX
- 6) IDENTIFICATION: ENGRAVE P/N & B/N ON FLANGE WITHIN 0.25" OF BUBBLE. USE 0.125" LETTERS TO MAX DEPTH OF 0.005".
- 7) WEIGHT: 4.88 lbs
- 8) FORM PER D3269-2T1 AND QSI 022
FORMING PROCESS: (a) DRAPE OVER D3269-2T1 MOLD
(b) HEAT TO 290°F
(c) VACUUM FORM TO SPECIFIED HEIGHT
(d) LET COOL TO AT LEAST 100°F BEFORE HANDLING
(e) TRIM FLANGE TO PROFILE OF MOLD

RELEASED
2009-09-23

DESIGN	92	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	UP	DRAWING NO. REV. E
MFG. APPR.	56	D3269 SHEET 2 OF 2
APPROVED	AW	TITLE SCALE
DE APPR.	AW	BUBBLE WINDOW NTS
DATE	09.08.21	COPYRIGHT © 2005 BY DART AEROSPACE LTD

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8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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